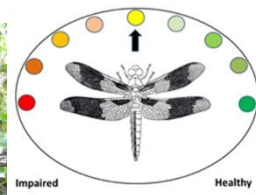


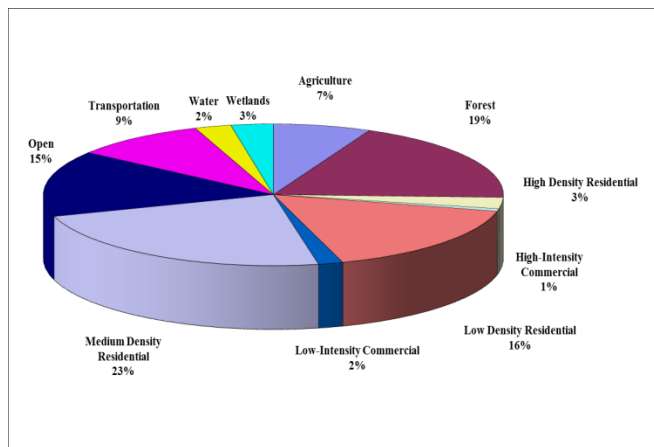
## Waterbody: Summer Creek



## Basin: Lake Jackson

Summer Creek at Bannerman is a slightly tannic stream located in northwestern Leon County and discharges to Lake Carr.

As shown in the figure below, approximately 61% of land use in the 1,546 acre watershed is residential, commercial, agriculture, or transportation. Increases in stormwater runoff, and waterbody nutrient loads can often be attributed to these types of land uses.



## Background

Healthy, well-balanced stream communities may be maintained with some level of human activity, but excessive human disturbance may result in waterbody degradation. Human stressors may include increased inputs of nutrients, sediments, and/or other contaminants from watershed runoff, adverse hydrologic alterations, undesirable removal of habitat or riparian buffer vegetation, and introduction of exotic plants and animals. Water quality standards are designed to protect designated uses of the waters of the state (*e.g.*, recreation, aquatic life, fish consumption), and exceedances of these standards are associated with interference of the designated use.

## Methods

Surface water samples were collected to determine the health of Summer Creek and met the requirements of the Florida Department of Environmental Protection (FDEP).

## Results

### Nutrients

According to FDEP requirements, Numeric Nutrient Criteria (NNC) (expressed as an annual geometric mean) cannot be exceeded more than once in a three year period. Due to low water conditions, FDEP data requirements for the NNC could not be met in 2007 and 2010 through 2014 (Table 1). The 2008 and 2009 results showed that the NNC thresholds were not exceeded. Even though the minimum number of samples was not collected in 2014, results (based on one sample) for total nitrogen (0.57 mg/L) and total phosphorus (0.01 mg/L) demonstrated that nutrients remained below the NNC threshold.

**Table1.** FDEP's total nitrogen and phosphorus criteria for streams applied to Summer Creek.

Summer Creek	Total Nitrogen Threshold 1.03 mg/L	Total Phosphorus Threshold 0.18 mg/L
2007	-	-
2008	0.37	0.02
2009	0.20	0.03
2010- 2014	-	-

#### *Dissolved Oxygen (DO)*

As Figure 1 shows, Summer Creek did not always meet the Class III criteria for DO. Staff believes the low DO in Summer Creek is due to upstream wetlands and the naturally low gradient, low flow condition of the creek. Low DO is typical of these conditions.

#### *Other Parameters*

Fecal coliform bacteria exceeded the Class III water quality standard of 800 colonies/100 mL during the August 2013 sampling event (1000 colonies/100 mL). Other water quality parameters appear to be normal for the area and no other impairments were noted.

#### **Conclusions**

Based on ongoing sampling, Summer Creek met the nutrient thresholds for the East Panhandle Region. Summer Creek did not always meet the Class III criteria for DO. This stream is a low gradient, low flow stream that drains a wetland, so these results are not unexpected. Fecal coliform bacteria exceeded the Class III water quality standard of 800 colonies/100 mL during the August 2013 sampling event (1000 colonies/100 mL). Other water quality parameters appear to be normal for the area and no other impairments were noted.

Thank you for your interest in maintaining the quality of Leon County's water resources. Please feel free to contact us if you have any questions.

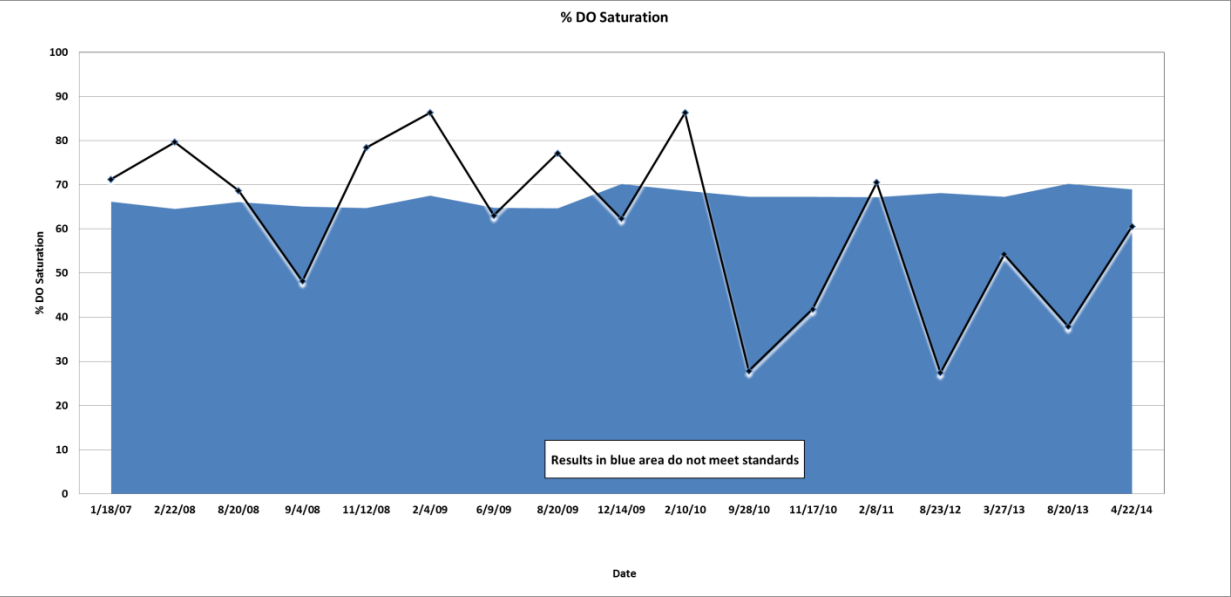
#### **Contact and resources for more information**

[www.LeonCountyFL.gov/WaterResources](http://www.LeonCountyFL.gov/WaterResources)

[Click here to access the results for all water quality stations sampled in 2014.](#)

[Click here for map of watershed – Sample site 22.](#)

Johnny Richardson, Water Resource Scientist  
(850) 606-1500  
[Richardsonjo@leoncountyfl.gov](mailto:Richardsonjo@leoncountyfl.gov)



**Figure 1.** Dissolved Oxygen Percent Saturation results for Summer Creek.